

CLAIMS

- 1 1. A method of purifying, comprising the following steps:
- 2 a) providing a quantity of degassed water;
- 3 b) heating the degassed water to at least 260
- 4 degrees F.;
- 5 c) injecting the heated degassed water into a
- 6 vacuum chamber to superheat the water to at least 350
- 7 degrees F.; and
- 8 d) allowing the super heated degassed water to
- 9 vaporize in an explosive fashion, evaporating rapidly and
- 10 condensing in a counter current chiller.
- 1 2. The method in claim 1, further comprising the step of
- 2 draining the condensed water into a holding tank.
- 1 3. The method in claim 1, further comprising the step of
- 2 pumping the water out through a mineral column and a carbon
- 3 column to replenish the trace minerals and remove any
- 4 residual "off taste".
- 5 4. The method in claim 1, further comprising the step of
- 6 attaching an incoming water line to a counter current heat
- 7 exchanger to preheat the incoming water and cool the "high
- 8 side" gas in a refrigeration unit.
- 1 5. The method in claim 4, wherein the heat exchanger
- 2 further comprises a first counter current conduit contained
- 3 within a gas conduit.

1 6. The method in claim 4, wherein the water incoming into
2 the counter current exchanger is the same temperature as
3 the exiting gas and the exiting water is the same
4 temperature as the incoming gas.

1 7. The method in claim 1, further comprising the step of
2 providing an electronically controlled valve for
3 controlling access of incoming water to the system,
4 maintaining the system or to cut off water in an emergency.

1 8. The method in claim 1, wherein the process water
2 enters a band of centrifugal, vacuum chambers through a
3 manifold and electronic valving system, closing 2
4 electronic valves and wherein the centrifugal force forms
5 a thin layer of water and the vacuum as well as the
6 centrifugal force brings about a removal of dissolved gases
7 from the feed water.

1 9. A point of use water purification system, comprising:
2 a) means for heating degassed water to at least 260
3 degrees F.;
4 b) a heated vacuum chamber for receiving the heated
5 water and vaporizing the water in an explosive fashion; and
6 c) means for condensing and cooling the water for
7 consumption.

1 10. The system in claim 9, wherein the water is condensed

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2 in a counter current chiller.

1 11. The system in claim 9, further comprising a mineral
2 column and carbon column for replenishing the trace
3 minerals and removing any residual "off taste" from the
4 condensed water.

1 12. The system in claim 9, further comprising a
2 containment means wherein the incoming water line is
3 attached to a counter current heat exchange to preheat the
4 incoming water and cool the "high side" gas in a
5 refrigeration unit.

1 ~~13~~. A point of use water purification system, comprising:

2 a) means for heating degassed water to at least 260
3 degrees F.;

4 b) a heated vacuum chamber for receiving the heated
5 water and vaporizing the water in an explosive fashion;

6 c) means for condensing and cooling the water for
7 consumption; and

d) means for replacing trace minerals in the water
prior to consumption.

1 14. The system in claim 13, further comprising a heat
2 exchanger further comprising, counter current conduits
3 defining a water conduit on the inside of a gas conduit.

1 15. The system in claim 13, wherein the incoming water

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2 flowing into the counter current exchanger is the same
3 temperature as the exiting gas and the exiting water is the
4 same temperature as the incoming gas.

1 16. The system in claim 13, further comprising an
2 electronically controlled valve for controlling the access
3 of incoming water into a system, for maintaining or cutting
4 off water in an emergency.

1 17. The system in claim 13, wherein there is provided a
2 band of centrifugal vacuum chambers to a manifold and
3 electronic valving system for receiving the condensed and
4 cooled water.

1 18. The system in claim 13, further providing an
2 electronically heated (or gas heated or other energy
3 source) vegetable oil circulated through a jacket in the
4 "preheat" heat exchanger and the heated vacuum chamber.

1 19. The system in claim 13, further providing an
2 electrical refrigeration unit used to chill the brine of
3 the counter current condensing chamber and to provide heat
4 to the feed water "preheat" heat exchanger.

1 20. The system in claim 13, further providing a back wash
2 system for each part of the system which contains a scale
3 dissolving potable water for keeping the system clean; the
4 back wash timed and sequenced by the computer processor.

1 21. The system in claim 13, wherein the unit provides at
2 least four (4) degassing centrifugal vacuum chambers and
3 four (4) heated vacuum vaporization chambers, each of which
4 operates as a batch process and is sequenced by the
5 computer controller as sensors indicate the unit is
6 operational from the stand point of temperature, pressure
7 or vacuum.